Remarks

Applicants have reviewed this Application in light of the Office Action ("Office Action") dated June 25, 2009. The Office Action rejects Claims 1-39. Applicants traverse the rejections and respectfully request reconsideration and allowance of all pending claims.

Section 103 Rejections

Claims 1-3, 9, 12-14, 23-25, and 34-36

The Office Action rejects Claims 1-3, 9, 12-14, 23-25, and 34-36 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2004/0103218 A1 in the name of Blumrich, et al. ("*Blumrich*") in view of U.S. Patent No. 7,065,764 B1 issued to Prael, et al. (*"Prael"*). Applicants traverse the rejections and respectfully request reconsideration and allowance of Claims 1-3, 9, 12-14, 23-25, and 34-36.

The rejection of Claim 1 is improper because the *Blumrich-Prael* combination fails to teach, suggest, or disclose each element of Claim 1. For example, the *Blumrich-Prael* combination fails to teach, suggest, or disclose "a plurality of cluster agents, each cluster agent associated with one of a plurality of nodes, each node comprising a switching fabric integrated to a card and at least two processors integrated to the card" as recited in Claim 1. *Blumrich* generally discloses a supercomputing system that includes computing nodes and I/O nodes. (Fig. 5; ¶ 0057). *Blumrich* discloses that the computing nodes and I/O nodes have Ethernet and Infiniband ports for connecting to external Ethernet and Infiniband switches. (Fig. 2; ¶¶ 0065-67, 0259). For example, *Blumrich* discloses that a separate, external 100 Mbps Ethernet switch connects a subset of computing nodes to each other and to an I/O node. (Fig. 5; ¶¶ 0057, 0066, 0079, 0146). In addition, *Blumrich* discloses that a separate, external Gigabit Ethernet or Infiniband switch connects the I/O node to an external RAID system. (Fig. 5; ¶¶ 0067, 0081). Thus, *Blumrich* merely discloses Ethernet and Infiniband switches that are separate from and external to the computing nodes and I/O nodes. Merely disclosing switches that are separate from and external to computing nodes and I/O nodes does not teach, suggest, or disclose "a plurality of nodes, *each node comprising a switching fabric integrated to a card*" as recited in Claim 1. (Emphasis added).

Prael fails to cure this deficiency of *Blumrich*. *Prael* generally discloses a system that manages clusters of parallel processors. (Col. 1, ll. 53-56). *Prael* describes a "cluster"

as a collection of stand alone computers that may work together as a single integrated computing resource. (Col. 4, ll. 7-20). Specifically, the cited portion of *Prael* states:

> A cluster is a type of parallel or distributed processing system consisting of a collection of interconnected stand alone computers (called "nodes") working together as a single integrated computing resource. The individual nodes can be a single or multiprocessor system (such as a PC, a workstation, or a symmetric multiprocessor "SMP") with memory, I/O facilities, and an operating system.

(Col. 4, ll. 9-17). Thus, the cited portion of *Prael* discloses "a collection of interconnected stand alone computers...working together as a single integrated computing resource." (Col. 4, ll. 9-17). Merely disclosing stand alone computers (which *Prael* calls "nodes") that "work together" as a single integrated computing resource does not teach, suggest, or disclose that "*each node compris[es] a switching fabric integrated to a card*" as recited in Claim 1. (Emphasis added). Therefore, the *Blumrich-Prael* combination fails to teach, suggest, or disclose "a plurality of cluster agents, each cluster agent associated with one of a plurality of nodes, each node comprising a switching fabric integrated to a card and at least two processors integrated to the card" as recited in Claim 1. Accordingly the rejection of Claim 1 should be withdrawn. For at least the foregoing reasons, Applicants respectfully request reconsideration and allowance of Claim 1.

In rejecting Claims 12 and 23, the Office Action employs rationale that is similar to that used to reject Claim 1. Accordingly, for reasons analogous to those stated above with respect to Claim 1, Applicants respectfully request reconsideration and allowance of Claims 12 and 23.

Claims 2-3, 9, 13-14, 24-25, and 34-36 depend from independent claims shown above to be allowable. In addition, these claims recite further elements that are not taught, suggested, or disclosed by the cited references. Accordingly, Applicants respectfully request reconsideration and allowance of Claims 2-3, 9, 13-14, 24-25, and 34-36.

Claims 4-8, 10-11, 15-22, 26-33, and 37-39

The Office Action rejects Claims 4-5, 8, 10-11, 15-16, 19-22, 26-27, and 30-33 under 35 U.S.C. § 103(a) as being unpatentable over *Blumrich* in view of *Prael* and further in view of "The Cactus Worm: Experiments with Dynamic Resource Discovery and Allocation in a Grid Environment" by Allen, et al. ("*Allen*"). The Office Action rejects Claims 6-7, 17-18, and 28-29 under 35 U.S.C. § 103(a) as being unpatentable over *Blumrich* in view of *Prael*

and *Allen* and further in view of U.S. Publication No. 2003/0217105 A1 in the name of Zircher, et al. (*"Zircher"*). The Office Action rejects Claims 37-39 under 35 U.S.C. § 103(a) as being unpatentable over *Blumrich* in view of *Prael* and in further view of Official Notice. Applicants respectfully traverse the rejections.

With respect to Claims 37-39, Applicants showed in their Response dated February 12, 2009 that the Office Action's assertion of Official Notice is improper. Furthermore, in rejecting Claims 37-39, the *Office Action* employs rationale that is similar to that used to reject Claim 1. Accordingly, for reasons analogous to those stated above with respect to amended Claim 1, Applicants respectfully request reconsideration and allowance of amended Claims 37-39.

Claims 4-5, 8, 10-11, 15-16, 19-22, 26-27, and 30-33 depend from independent claims shown above to be allowable. The cited portions of *Allen* and *Zircher* fail to cure the deficiencies of *Blumrich* and *Prael* discussed above with respect to Claim 1. In addition, Claims 4-5, 8, 10-11, 15-16, 19-22, 26-27, and 30-33 recite further elements that are not taught, suggested, or disclosed by the cited references. For example, the cited references fail to teach, suggest, or disclose "determin[ing] dimensions of the job based, at least in part, on the one or more job parameters" and "dynamically allocat[ing] the particular subset based, at least in part, on the determined dimensions" as recited in Claim 10. The Office Action relies on *Allen* for this portion of Claim 10. *Allen* generally discloses mechanisms for adaptive resource selection in a computing grid environment. (Abstract). The cited portion of *Allen* describes mapping a computational task to available processors within a workgroup. (Introduction, ll. 4-8). Specifically, the cited portion of *Allen* states:

> [A] computational task might be mapped initially to available processors within a workgroup, but then, as either the characteristics of the computation and/or resource availability change, extend or migrate to other resources available within a physical or "virtual" organization -- and/or to resources provided by a commercial computational services provider.

(Introduction, ll. 4-8). Merely mapping a computational task to available processors and, as characteristics change, extending to other resources, as disclosed in *Allen*, does not teach, suggest, or disclose "*determin[ing] dimensions* of the job" or "dynamically allocat[ing] the particular subset based, at least in part, on the *determined dimensions*" as recited in Claim 10. (Emphasis added). The other cited references fail to cure this deficiency of *Allen*. Thus, the cited references fail to teach, suggest, or disclose "determin[ing] dimensions of the job based,

at least in part, on the one or more job parameters" and "dynamically allocat[ing] the particular subset based, at least in part, on the determined dimensions" as recited in Claim 10. Accordingly, the rejection of Claim 10 should be withdrawn.

For at least the foregoing reasons, Applicants respectfully request reconsideration and allowance of Claims 4-5, 8, 10-11, 15-16, 19-22, 26-27, 30-33, and 37-39.

No Waiver

All of Applicants' arguments are without prejudice or disclaimer. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements. The example distinctions discussed by Applicants are sufficient to overcome the rejections.

Conclusion

Applicants have made an earnest attempt to place this Application in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims.

If a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to call Justin N. Stewart, Attorney for Applicants, at (214) 953-6755.

Applicants believe that no fees are due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicants

Justin N. Stewart
Reg. No. 56,449

Date: September 25, 2009

CORRESPONDENCE ADDRESS:

Customer Number **45507**